

## CLAIMS

1. Method for hot dip coating a metal strand (1), especially steel strip, in which the metal strand (1) is passed vertically through a coating tank (3) that holds the molten coating metal (2) and through an upstream guide channel (4) of well-defined height (H), wherein an electromagnetic field is generated in the region of the guide channel (4) by means of at least two inductors (5) installed on either side of the metal strand (1) for the purpose of retaining the coating metal (2) in the coating tank (3), characterized by the fact that a predetermined volume flow (Q) of coating metal (2) is supplied to the guide channel (4) in the region of its vertical extent (H).

2. Method in accordance with Claim 1, characterized by the fact that the predetermined volume flow (Q) of coating metal (2) supplied to the guide channel (4) represents a portion of the replenishment volume of coating metal (2) per unit time that is necessary to maintain a desired level (h) of coating metal (2) in the coating tank (3).

3. Method in accordance with Claim 1, characterized by the fact that the predetermined volume flow ( $Q$ ) of coating metal (2) supplied to the guide channel (4) represents the entire replenishment volume of coating metal (2) per unit time that is necessary to maintain a desired level ( $h$ ) of coating metal (2) in the coating tank (3).

4. Method in accordance with any of Claims 1 to 3, characterized by the fact that the volume flow ( $Q$ ) of coating metal (2) that is supplied to the guide channel (4) is supplied under open-loop or closed-loop control.

5. Device for hot dip coating a metal strand (1), especially steel strip, in which the metal strand (1) is passed vertically through a coating tank (3) that holds the molten coating metal (2) and through an upstream guide channel (4), with at least two inductors (5) installed on either side of the metal strand (1) in the area of the guide channel (4) for generating an electromagnetic field for retaining the coating metal (2) in the coating tank (3), especially for carrying out the method in accordance with any of Claims 1 to 4, characterized by at least one supply line (6, 7, 8, 9) for supplying a predetermined volume flow ( $Q$ ) of coating metal (2),

which supply line (6, 7, 8, 9) opens into the guide channel (4) in the region of the vertical extent (H) of the guide channel (4).

6. Device in accordance with Claim 5, characterized by the fact that the supply line (6, 7) opens into the region of the long side (11) of the guide channel (4).

7. Device in accordance with Claim 5, characterized by the fact that the supply line (8, 9) opens into the region of the short side (10) of the guide channel (4).

8. Device in accordance with any of Claims 5 to 7, characterized by the fact that the width (B) or the diameter of the supply line (6, 7, 8, 9) is small relative to the dimension of the long side (11) of the guide channel (4).

9. Device in accordance with Claim 8, characterized by the fact that the width (B) or the diameter of the supply line (6, 7, 8, 9) is no more than 10% of the width of the long side (11) of the guide channel (4).

10. Device in accordance with any of Claims 5 to 9, characterized by the fact that the coating tank (3) is connected to a supply system (12) for coating metal (2), from which coating metal (2) is conveyed into the supply line or supply lines (6, 7, 8, 9).